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NOTES AND BRIEF ARTICLES

Professor F. S. Earle spent some days at the Garden about the middle of August and then sailed for Porto Rico, where he will investigate for the United States Government a serious and rather obscure disease of sugarcane.

Mr. Stephen C. Bruner, formerly assistant pathologist at the Estación Experimental Agronómica, Santiago de las Vegas, Cuba, has been appointed pathologist to succeed Mr. John R. Johnston, now head of the Office of Sanidad Vegetal, Havana.

Venenarius pantherinoides, described by Murrill from Seattle in 1912, has recently been collected at Olympia, Wash., by Miss M. McKenny, who states that it was eaten by two persons with almost fatal results.

Mr. F. W. Haasis reports in the *Journal of Agricultural Research* for 1917 that young pines in plantations at Portland, Conn., were found to be dying around ant-hills, the trouble being usually associated with fungous and scolytid infestations. Ants are thought to be instrumental in spreading the disease.

In a recent number of *Science*, Professor Gage suggests an excellent method for the preparation of lantern slides showing diagrams, tables, etc. This consists in first covering the glass with a thin coating of varnish and then drawing upon it with a pen, using India ink. Such slides may be covered and bound if desired for permanent use.

An unprecedented danger from fire in the National Forests of the Northwest and Pacific Coast, owing to early drought, high winds, electrical storms, labor shortage, and depletion of the regular protective forces because of the war, has made necessary a

loan of \$1,000,000 to the Forest Service from the President's special defense fund.

A particularly large and excellent collection of fungi, accompanied by beautiful photographs and many notes, has been sent to the Garden for determination by Henry J. Rust, of Coeur d'Alene, Idaho. This region is interesting because it lies near the boundary line between the Rocky Mountain region and the Pacific coast.

Several wood-destroying fungi have been recently sent in for determination by Professor R. J. Blair, of McGill University, Montreal; among them *Coriolus pubescens*, *Coriolellus serialis*, *Gloeophyllum trabeum*, *Lentodinium tigrinum*, *Pyropolyporus conchatus*, *Phaeolus sistotremoides*, and *Micromphale ulmarium*. Specimens of *Lentodinium tigrinum* are particularly well developed, which is rather rare for this species.

A gigantic specimen of *Ganoderma sessile* Murrill, a bracket fungus with a reddish, shining surface, was brought to the Garden early in September by Mr. Michael Dougherty, who found it at the base of a dead red maple in Central Park. The specimen in its dried state measured 18 inches across and consisted of several layers superimposed, making the entire cluster about 6 inches thick. This species has been said by some to be identical with *Fomes lucidus* of Europe, but it is quite certain that no European mycologist would recognize it in this New York form.

A serious disease of wheat, long known in Europe, has recently been found in certain parts of the United States, particularly in Virginia, where in some fields losses have been as high as 40 per cent. of the crop. The disease, caused by a small nematode, or eelworm, usually affects the wheat heads, although it may occur on all parts of the plant above ground. Affected heads stay green and ripen late and are smaller than those not affected. The chaff usually opens at a wide angle. In place of grains of wheat,

the affected heads contain dark, hard galls somewhat shorter and thicker than wheat grains. Control measures consist of planting only disease-free seed, practicing crop rotations, and preventing the spread of the nematodes from one field to another by means of infected soil which may cling to the feet of men or animals or to farm implements.

A recent paper by Stakman and others, in the *Journal of Agricultural Research*, treats of the impossibility of breeding cereals permanently resistant to rust. The facts recorded in the paper, supported by experimental work in the rust nursery and by field observations, indicate that rust resistance is comparable with other permanent characters, and that it is not primarily controlled by seasonal conditions, soil type, geographical location, or other cultural conditions. It is rather an hereditary character, which cannot be produced by the accumulation of fluctuating variations within a susceptible line, nor broken down by changes in the host or parasite. The resistance of wheat varieties may vary in different regions because of the presence of different biological forms of rust.

Mr. Frank N. Meyer, one of the most successful agricultural explorers ever employed by our Government, was missed from a steamer on the Yangste River early in June and his body was afterwards recovered. There were no indications as to the cause of death. Many duplicates of Mr. Meyer's collections of fungi in the Orient came to the Garden for determination and were deposited in the herbarium. Only recently, Mr. Meyer succeeded in discovering the chestnut canker on wild chestnut trees in China, the original home of the disease.

It is stated by Mr. J. B. Rorer that an alga, *Cephaleuros virescens*, causes a leaf-fall and die-back disease of cacao on practically every estate in Trinidad. This disease has been under observation since 1912 and has been described as attacking any cacao tree at any time during the year, but more readily during the last

two months of the dry season, especially if the trees are not in a good situation or condition. The disease has been called die-back and sun-scald, but the author suggests the name of algal disease in order to distinguish it from true die-back and sun-scald, which are said to be caused by a *Diplodia*. Spraying with Bordeaux mixture has been attended by beneficial results, and attention to tillage, drainage, shade, and protection from wind are also considered essential to the complete control of the disease.

In the *Journal of Agricultural Research* for 1918, W. H. Long and H. M. Harsch describe a method for differentiating various wood-rotting fungi by their cultural characters alone when grown upon artificial media. It is claimed that when cultural characters of closely related but really distinct species are compared, marked and constant differences in the character of the mycelium will be found on certain corresponding agars in the series of cultures representing the two species, while if the fungi are really of the same species, no constant differences will occur. Basing the conclusion on these facts, the authors state that unknown rots can be identified by making pure cultures of the causative organisms from diseased wood.

Professor Bruce Fink, of Miami University, has contributed the following note:

"On the fifth of September, 1918, I was called to examine what a farmer had brought to Oxford, Ohio, and was exhibiting as an unusual mushroom. I found the exhibit to be a cluster of *Clitocybe illudens*, 90 inches in circumference, 15 inches high, and 44 inches from one side over the top to the opposite side. The cluster was compressed-hemispheric in form. There were approximately 300 plants that stood out so that they could be seen readily, and some bystander thought there were as many as 400 in all, counting those that were compressed between the ones that were plainly visible. Seeing this unusual cluster of fungi recalls that in 1896, I found at Fayette, Iowa, a specimen of *Lycoperdon giganteum* which was 85 inches in circumference. The plant was of the usual form for this species, and was, as I recall, between

18 and 24 inches high. Unfortunately, I took only the measurement of the circumference. The plant would sit on top of a bushel-and-a-half basket of the usual form and extend beyond the basket on all sides."

In order to prevent a large percentage of loss in the new crop of potatoes after storing, the Department of Agriculture is making the following suggestions to farmers:

Get rid of every bit of vegetable matter in the storage cellar; sweep and brush until it is clean; then give a thorough dose of fungicide, either gas or spray, the quickest and easiest to apply being formaldehyde gas. For each 1,000 cubic feet of space, use 10 ounces of formaldehyde and 5 of potassium permanganate. Pour the formaldehyde over the permanganate in a deep container, and then leave the cellar immediately, because the gas is given off at once. Should it be found that these chemicals are too expensive, the Department recommends Bordeaux mixture of 5-5-50 strength. It may be applied with hand sprayer, pump, or broom; it is effective when thoroughly used and it does not cost much. It is expecting too much, says the department, to look for potatoes fit for market from a dirty, ill-ventilated cellar. Time, money, and work spent in growing a crop are wasted if the potatoes are stored where dead potatoes are carrying over the organisms that cause rots. Dry-rot attacks newly stored potatoes through bruises and wounds and spreads throughout the stored supply. Many farmers have cellars that now contain piles of sacks of potatoes, all rotten, sacks and all, and constituting a wet, foul mass that helps to decay the timbers and menaces the crop to be stored.

BYRON DAVID HALSTED

Professor Halsted died at his home in New Brunswick, New Jersey, on August 28, 1918, after a protracted illness. He had occupied the Chair of Botany in Rutgers College for nearly thirty years and had previously been professor in the Iowa State University.

Professor Halsted has served as a member of the Advisory Board of "*North American Flora*," published by the New York Botanical Garden, since the commencement of that work in 1905; and, during the several years preceding, while it was in the organization stage, he was an active member of the group of American botanists who made the enterprise possible. He has been president of the Society for the Improvement of Agricultural Science and of the Botanical Society of America; edited the *American Agriculturist* for a period; and has also been one of the editors of the Torrey Botanical Club.

He was a highly successful and greatly beloved teacher and investigator of renown. His most important publications have been in the fields of agricultural botany and plant diseases, and they include over 300 titles. His loss is a deep personal bereavement to his many friends and professional associates.
